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Staff Report

Infrastructure & Public Works

Report To: Committee of The Whole
Meeting Date: February 22, 2017
Report Number: CSPW.17.028
Subject: Water Section Operations Update – September to December 2016
Prepared by: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report CSPW.17.028 entitled “Water Section Operations Update – September to December 2016” for their information.

B. Overview

This report provides an overview of Town’s drinking water system for the period of September to December 2016. The Town continues to provide quality drinking water to Town residents and visitors in compliance with regulatory requirements.

C. Background

Ensuring the safety and quality of the Town’s drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system. Town Council has requested regular updates. This Report continues to provide the information requested.

As mentioned in previous Reports, the purpose of Attachment # 1 – Water Operations Update is to provide regular up-to-date information with regards to the status and operation of the Town’s drinking water system and to report on water quality issues for the period of September to December 2016.

Topics such as an overview of the Town’s drinking water system were provided in the initial report, and as such will only be included intermittently to remind Council of the drinking water system components.

This report addresses:

- Raw, Treated and Distribution Water Quality Data
- Staff Training
- Drinking Water Quality Management Standard Update

- Water Treatment Plant Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Drinking Water Quality
- Water Quality Concerns / Resident Complaints

D. Analysis

Attachment #1 demonstrates that Water Operators continue to provide quality drinking water to its residents while ensuring long-term sustainability of the system through regular preventative maintenance programs.

E. The Blue Mountains Strategic Plan

Goal #5: Ensure Our Infrastructure is Sustainable

F. Environmental Impacts

None

G. Financial Impact

None

H. In consultation with

John Caswell, Manager of Water & Wastewater Services

I. Attached

1. Attachment # 1 – Water Section Operations Update – September to December 2016

Respectfully submitted,

Meg Boyd

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Town of The Blue Mountains

Water Section Operations Update September to December 2016

Introduction

Ensuring the safety and quality of the Town's drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system.

The purpose of this report is to provide Council with a brief overview of the Town's drinking water system and to report on water quality issues for the period of September to December 2016.

This report will address the following:

- Raw, Treated and Distribution Water Quality Data
- Drinking Water Quality Management System Update
- Staff Training
- Water Treatment Plant and Water Booster Station Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

System Information

Drinking Water System Number:	220001762
Drinking Water System Name:	The Blue Mountains Drinking Water System
Drinking Water System Owner:	Town of The Blue Mountains
Drinking Water System Category:	Large Municipal Residential
Water Treatment Subsystem Class:	Class 2 Certificate No. 1758
Water Distribution Subsystem Class:	Class 3 Certificate No. 1759
Municipal Drinking Water License:	111-101
Municipal Drinking Water Permit:	111-201

Raw, Treated and Distribution Water Quality Data

Ontario Regulation 170/03 specifies guidelines for the number of samples to be taken, the frequency of sampling and the actions to be taken if any of the sample results indicate adverse water quality.

Schedule 10 of Ontario Regulation 170/03 requires weekly sampling and testing for E.Coli, Total Coliform and Heterotrophic Plate Count (HPC).

Weekly samples are collected for raw and treated water from the Thornbury Water Treatment Plant (WTP) and analyzed by an accredited laboratory.

Overviews of the raw and treated sampling data for the period of September to December 31, 2016 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0 to 216	N/A
Total Coliform	2 to 218	N/A

Table 2 – Treated Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0	
Total Coliform	0	
HPC	0	

Drinking water quality is further monitored throughout the distribution system by a comprehensive sampling and analysis program involving weekly sampling at designated sampling stations as well as reservoirs and booster stations.

An overview of the distribution sampling data for the period of September to December 31, 2016 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E.Coli	182	0	0
Total Coliform	182	0	0
HPC	143	0 to 62	N/A

Drinking Water Quality Management Standard Update

The Safe Drinking Water Act, 2002 (SDWA) requires Owners and Operating Authorities of Municipal Residential Drinking-Water Systems to have an accredited Operating Authority. In order to become accredited, an Operating Authority must establish and maintain a Quality Management System (QMS). The established QMS is then audited by a third party Accreditation

Body which will determine if the Operating Authority is meeting the requirements of the Drinking Water Quality Management Standard (DWQMS). This is a legislated requirement.

On October 11, 2016, a surveillance audit was conducted by NSF International Strategic Registrations (NSF-ISR), who is the third party Accreditation Body selected by the Town. The final audit report identified one (1) minor non-conformance. A non-conformance indicates that the QMS needs to be improved to meet an element of the DWQMS and the specific details are outlined by the Auditor in the form of a Corrective Action Request (CAR).

Staff prepared responses to the CAR identified and on November 23, 2016 Staff received notification that the submitted CAR had been accepted.

Staff Training

In accordance with Ontario Regulation 128/04, all Water Treatment and Distribution Operators possess operating licenses appropriate to the class of the facility where they are employed. As the Town's distribution system is a Class 3 subsystem, Operators are required to complete a minimum of 26 hours of on the job practical training and 14 hours of formal Continuing Education Units (CEU) training per year.

A summary of the courses attended from September to December 31, 2016 by Operators is provided in Table 4:

Table 4 – Training Overview

Operator Name	Training Course Attended
Scott Hill	<ul style="list-style-type: none">Georgian Bay Waterworks Fall Conference
Scott Marritt	<ul style="list-style-type: none">Georgian Bay Waterworks Fall ConferenceDiligence in Drinking Water Operations

Water Treatment Plant and Water Booster Station Maintenance Summary

The following table provides a breakdown of the maintenance performed at the Water Treatment Plant from September to December 31, 2016.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
Annual Clearwell Inspection	1
Monthly Maintenance at WTP and Stations	32
New 4-20 splitter box on UVT	1
Bi-annual UV Maintenance	1
New solenoid on fill valve at Thornbury Reservoir	1
New pH probe installed in CIP room at WTP	1
Replaced roof at Wards Road Booster Station	1
New raw water sample pump installed	1
Chlorinator, injectors and vacuum regulator PM kits	1
Stand-by Chlorinator PM kit	1
New chlorine feed lines to chlorinators installed	1
New UV lamp 1 on UV # 3	1
New solenoid valve on air manifold for Rack 2	1

Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for September to December 31, 2016:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Meter repairs	3
Replace/Repair Jammed Meter	7
Replace/Repair Remote Touchpads	8
Repair Meter Other (leaks, reversed, etc.)	4
Meter Inspections (re-inspections, renovations, new construction)	42
Billing Verification, Hand Deliveries (notices, bills)	265
Install/Repair Radio Units	6
Customer Meetings (usage, pressure, complaints, etc.)	12
Closing Readings	216
Water Turn On	3
Meetings with contractors, business owners, site management (backflow requirements, unauthorized connections, losses etc.)	25

The following table provides a breakdown of the Water Distribution Work Orders completed for September to December 31, 2016

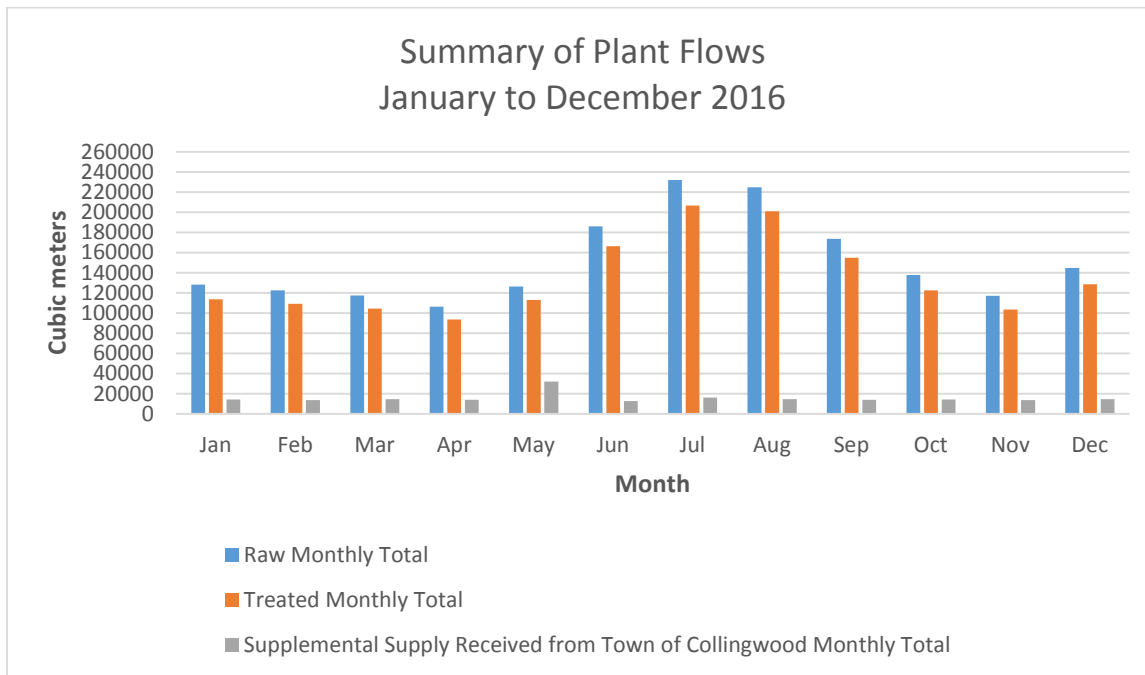
Table 7 – Distribution Work Orders

Work Order Description	Number Completed
Watermain service repairs	3
Valves operated	412
Valves replaced / new	1
Outstanding deficiencies arising from fire hydrant inspections	10
Service connection repairs completed	13
Service connection repairs outstanding	5
Service connection installations	4
Pressure reducing valve inspections	14
Air relief valve inspections	77
Fall Hydrant Flushing Program	326
Dead End Flushing Program – Number of Fire Hydrants Flushed	274
Water and Sewer locates completed	233
Automatic Flushing Stations – Weekly check of chlorine residuals	356
Service line inspection for leaks	2
Double Drain Chambers	9
Development Deficiency Check	1
Hydrants Winterized	96
Sample Station Winterized / Repaired	2
Station Clean-up's from Wind Storm	2

Summary of Plant Flows

A summary of the WTP Raw, Treated and supplement flow supply received from the Town of Collingwood is presented in Graph 1:

Graph 1:

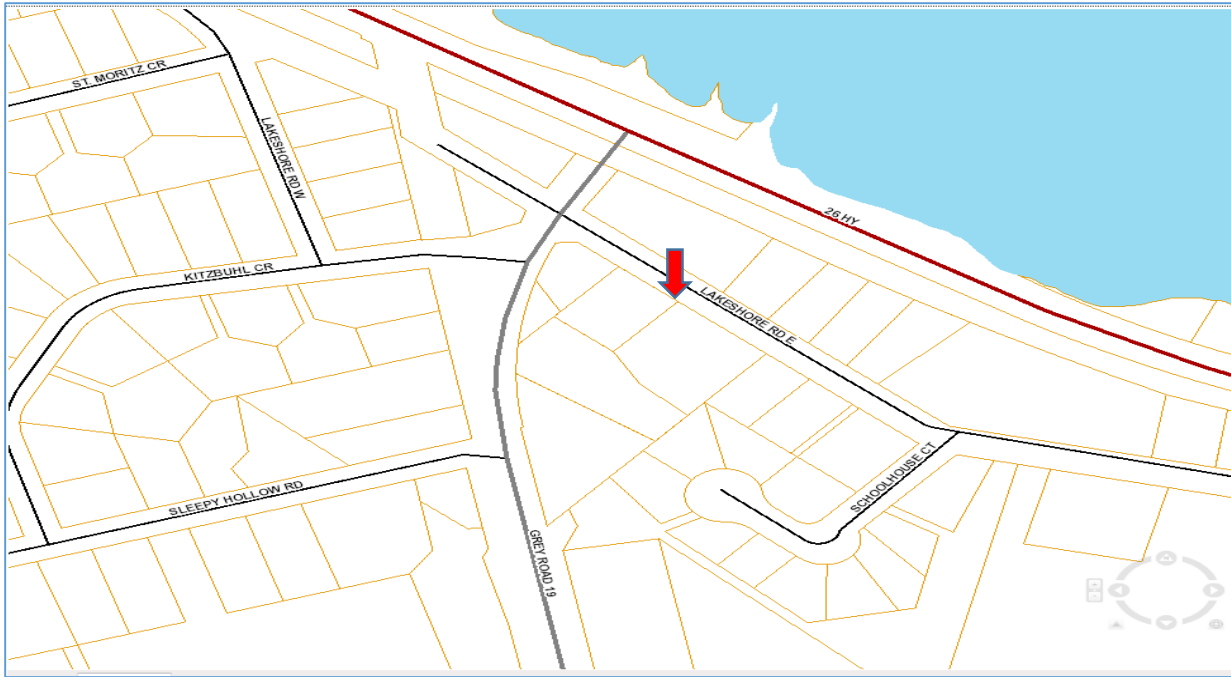


Watermain Break Summary

Watermain breaks are typically reported by the public, Town Staff or discovered during visual inspections by Operators. In most instances, watermain breaks are repaired by Operators and, at times, with the assistance of outside contractors or Staff from the Town's Roads Department.

For the period of September 1 to December 31, 2016, there were two watermain breaks as summarized below:

On November 6, 2016, the On-Call Operator received a call from a resident that water was pooling in resident's backyard. The watermain was leaking out of the glued saddle. Operators repaired the watermain the same day.



On December 28, 2016 a homeowner reported a watermain break at the corner of McAuley Street South. A high pressure gas main was in close proximity to the watermain which required Union Gas to be on site during the excavation. A third party was utilized for vacuuming services during the excavation given the close proximity of the high pressure gas main. Operators repaired the watermain the same day.



Incidents of Adverse Water Quality

This section describes all Adverse Water Quality Incidents (AWQI). This term refers to any treated water test result that does not meet a provincial water quality standard or a situation where disinfection of the Town's drinking water may be compromised. A single AWQI does not necessarily mean that the system's drinking water is unsafe – it indicates that, on at least one occasion, a water quality standard was not met.

The Town's drinking water system is operated in accordance with Ontario Regulation 170/03 and Operators follow the direction of this regulation when dealing with incidents of adverse drinking water. There were no incidents of adverse drinking water quality for the period of September to December 31, 2016.

Water Quality Concerns / Resident Complaints

Staff record information relating to the water quality issues on the Resident Water Quality Concern Form. If required, Operators attend the location of concern to collect samples or assess the nature of the concern.

The ongoing analysis of the water quality data is useful in determining if the water quality is changing throughout the distribution system over time. As an example, taste and odour complaints may indicate that the watermain in a particular area is deteriorating.

A summary of the water quality concerns received during the September to December 31, 2016 period is included in Table 8 below:

Table 8 – Water Quality Concerns

Water Quality Concern	Dates	Number of Occurrences
Discolored Water	September 1, 6	3
Water Composition	September 26	1
Water Hammer	October 20	1
Water Quality & Treatment System Solicitation	November 1	1
Low Water Pressure	December 6, 7	2